

Check-Digit Algorithms

The following algorithms should be used to verify the check digit for the Benefits Identification Card.

Subscriber ID Check digit Algorithm

Transactions sent through the Medi-Cal Point of Service (POS) system will contain the Beneficiary Identification (BID), the Medi-Cal Eligibility Determination System (MEDS) ID or the Client Index Number (CIN). Internal to the transaction generation software, the subscriber ID check digit calculation detailed below can be used to verify the accuracy of an ID that includes the check digit (i.e., 15-digit [BID] or 10-digit [SSN, MEDS, and CIN IDs]). The CIN uses the same check digit algorithm as the MEDS ID.

The following is a description of the BID/SSN check digit calculations.

Table Offset	0	1	2	3	4	5	6	7	8	9
CIN, MEDS ID	0	9	8	7	6	5	4	3	2	1
BID	0	2	4	6	8	1	3	5	7	9

The check digit is calculated by adding the sum of all odd-positioned digits, (alpha characters are to be converted to zero), to the sum of the table entry values corresponding to all even-positioned digits, then dividing the total by 10. The check digit is the remainder. Please see examples below:

MEDS ID Check digit Example: SSN = 123456789

Perform a numeric check on each of the characters in the MEDS ID or CIN, and convert any non-numeric characters to zero.

$$\begin{array}{rcl} \text{Odd-positioned Digits} & = & 25 \text{ (Sum of odd-positioned digits)} \\ (1 + 3 + 5 + 7 + 9) & & \end{array}$$

$$\begin{array}{rcl} \text{Corresponding} \\ \text{Even-positioned Digits from} \\ \text{Table } (8 + 6 + 4 + 2) & = & 20 \text{ (Sum of even-positioned digits)} \\ \hline & & 45 \div 10 = 4 \text{ with a remainder of } 5 \\ & & 5 \text{ is the check digit} \end{array}$$

HAP ID Check digit Example: ID= 12432149Y

$$\begin{array}{rcl} \text{Odd-positioned Digits} & = & 11 \text{ (Sum of odd-positioned digits)} \\ (1 + 4 + 2 + 4 + 0) & & \end{array}$$

$$\begin{array}{rcl} \text{Corresponding} \\ \text{Even-positioned Digits from} \\ \text{Table } (8 + 7 + 9 + 1) & = & 25 \text{ (Sum of even-positioned digits)} \\ \hline & & 36 \div 10 = 3 \text{ with a remainder of } 6 \\ & & 6 \text{ is the check digit} \end{array}$$

BID Check digit Example: BID = 12345678901234

$$\begin{array}{rcl} \text{Odd-positioned Digits} & = & 29 \text{ (Sum of odd-positioned digits)} \\ (1 + 3 + 5 + 7 + 9 + 1 + 3) & & \end{array}$$

$$\begin{array}{rcl} \text{Corresponding} \\ \text{Even-positioned Digits from} \\ \text{Table } (4 + 8 + 3 + 7 + 0 + 4 + 8) & = & 34 \text{ (Sum of even-positioned digits)} \\ \hline \end{array}$$

$$63 \div 10 = 6 \text{ with a remainder of } 3$$

3 is the check digit